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GPS GOES TO HOLLYWOOD

Azmi bin Hassan,Ph.D
Satellite Navigation Research Group (SNAG)
Faculty of Geoinformation Science And Engineering
Universiti Teknologi Malaysia, Skudai
e-mail :- azmi@fksg.utm.my

One of my favorite movie is 'True Lies' starring Arnold Schwarzenegger and Jamie Lee Curtis. Remember the scene where Arnold tries to track Jamie using electronic tracking device that shows her movement on a computer screen? No matter where Jamie goes, Arnold can track her from miles apart. Another favorite is 'Fair Game' with William Baldwin and Cindy Crawford. Let's begin with the scenes where both of them being chased by KGB agents. With Baldwin driving the truck, it seems that the bad guys can track every movement of the truck, no matter how fast Baldwin drives the truck! I have to confess that I'm a X-Filer fan of agent Fox Mulder and Dana Scully from the TV series X-Files. In one of the series, Fox Mulder locate a mysterious submarine near the North Pole. This scene shows how Mulder, despite blizzard and near zero visibility, can track and pinpoint the submarine location with only single coordinate output!

All the three scenes seem to be very far-fetched and very much a Hollywood hypes. But actually it is not. The tracking devices in the movies and TV show adopted from the same technology, which are the Global Positioning Systems (GPS) satellites. GPS was developed and maintained by the United States Department of Defence (USDoD) and deployed over two decades at a cost of more than US$ 10 billion. The adoption by Hollywood on GPS technology, on the surface, is a good thing to happen. But the problem is, all three scenes portraying the myth of GPS, which is bad for the lay man. In the True Lies scene, Arnold's GPS receiver was placed in Jamie's purse while the GPS tracker in Fair Game was put right underneath the truck! In the case of Mulder GPS submarine tracker, he's only using a single GPS receiver with no differential correction capability and therefore highly impossible for the receiver to produce a very highly accurate coordinates. But again, maybe SA was turn off at that particular time.

Yes, I'm being picky, at this particular instance. We should be happy that GPS is finally getting into public consciousness and believe me that you can strike a GPS conversation with the general public. This happened to me recently at my nephew's wedding where even though the guest at my table does not know the acronym of GPS but they are fully aware of GPS capability, especially the *JORAN*er's. Back to the root of the matter, why am I being so picky? In a 1996 Boston Globe article describing how two lost hiker in a White Mountain National Forest, the hikers seems to have gained a false sense of confidence from the GPS receiver they have purchased four days earlier before heading to the wilderness. They think with GPS they can find their way out and didn't bother to bring along a map. When the time arrive, they realize that without a map, latitude and longitude reading alone cannot bring them home. Luckily for them, they brought along a cellular telephone. The search and rescue team easily navigates to the lost couple using map and coordinate provided by the hikers. Now I wonder from where these hikers got the idea of GPS being a super tracker?

The GPS was designed as a dual-use system with the primary purpose of enhancing the effectiveness of U.S. and allied military forces. But GPS is rapidly becoming an integral component of the emerging Global Information Infrastructure, with applications ranging from mapping and surveying to international air, land and sea traffic management and global change research. In Malaysia, the mapping and surveying community has long used the GPS satellites as one of their tools in discharging their everyday sorties. Recently, the Malaysian Armed Forces undertook the initiative to provide their

military vehicles with GPS positioning systems. Not to be outdone, the KLIA limousine too was equipped with the same technology. So when your request for a limousine is met with efficient and prompt service, you have to thanks the GPS satellites.

One aerospace company based in Malaysia recently launched a hand-held GPS receiver. I'd like to quote what the managing director said during the product launching. He said " *The device is aim at maritime users and individuals who need to spend much of their time in isolated areas. When used on ships, the device can be used as an auto pilot whereby the ship is steered directly to its destination without human intervention. The device is priced at RM 1450 each*". Wow, that was my first reaction when I read the statement. They must have done tremendous advancement on a GPS chip in processing the C/A code since they can offer it at a very low priced. What they're offering is a GPS receiver what I consider can be categorized under the 'hobby' receiver mostly used for sporting activities such as fishing. I feel sorry for a JORANer's who used this receiver as a sole guide to reach a destination. Don't be surprised if your destination is Gelang Patah, you'll end up at Pontian instead!

The US Federal Aviation Administration (FAA) and various organizations is currently working on a program that uses GPS satellites instead of Instrument Landing Systems (ILS) for a Cat I to Cat III precision aircraft approach and landing. There are a few airports that are equipped with this GPS system but only utilized just to complement the ILS. It won't be long that, the GPS systems will take over from the ILS because it is cheaper and efficient to use GPS. Now back to the movies, in one of the scene from the movie Die Hard II, with (who else) Bruce Willis fighting the terrorist who got control of an airport and subsequently the navigational software. The hero fails to stop an aircraft from crashing because the terrorist bug the navigation software 'informing' the aircraft that the runaway lies 100 meter under the ground! The story line seems to be very Hollywood like. But if an airport adopts a Cat III precision approach and landing using solely the GPS systems, this kind of disaster is not impossible. GPS signals can be easily 'spoof', that is, the signal structure can be imitate and a GPS receiver doesn't know which is the true or false GPS signals. It has been debated that the shoot-down of flight KAL-007 by Soviet warplanes as it strayed off course over Russian territory should not have happened if the plane is equipped with GPS positioning system since the most basic GPS systems would provide position with an accuracy of $\pm$ 100 meters.